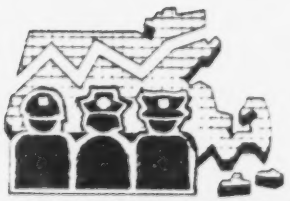
OCCUPATIONAL PROFILE OF SELECTED MANUFACTURING INDUSTRIES IN MASSACHUSETTS 1977



OCCUPATION/INDUSTRY RESEARCH PUBLICATION

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Job Market Research Service ● Massachusetts Division of Employment Security

AN OCCUPATIONAL PROFILE

OF

SELECTED MANUFACTURING INDUSTRIES

IN

MASSACHUSETTS

1977

Report Number 8

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ACKNOWLEDGEMENTS

Our sincere appreciation is extended to the many employers who participated in this survey, without whose support this labor market information would not be available.

Acknowledgement is also made to the United States Department of Labor and in particular to the Bureau of Labor Statistics both on the National and Regional level for their technical support.

We also wish to recognize the splendid support of Mary Davie, programmer, to the keypunching section under the supervision of Mary Sheehan, Assunta Finocchio who was responsible for control and processing of the survey and to Richard Fox for his field work.

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INTRODUCTION

The Occupational Employment Statistics Program is part of a Federal-State cooperative program involving State Employment Security Agencies as well as the Employment and Training Administration and Bureau of Labor Statistics. It was designed to meet the needs of economists, employment specialists, educators and others for current data on employment by occupations and projected data on employment by occupation and industry. The information obtained from this program will be used as input in constructing industry-occupation matrices that will provide the data base for projecting future manpower requirements, emphasized in the Comprehensive Employment and Training Act of 1973 and other employment and educational legislation.

This publication is the eighth in a series of planned documents on current occupational profiles of Massachusetts industries. Other occupational reports available from this division are listed on the last page.

Currently a new survey is being conducted for non-manufacturing industries, and plans call for updating all industry groups triennialy, as well as including education.

METHODOLOGY

The Sample

The second quarter 1976 report (ES-202) of employment and wages covered by the Massachusetts Employment Security Law was used as a sampling frame for the Occupational Employment Statistics survey.

The sampling frame was stratified by three-digit SIC's (Standard Industrial Classification) and by nine employment size classes. Establishments with less than four employees were excluded from the sample, and all units with employment of two hundred and fifty or more were automatically included. All other establishments were subject to sample selection on a random basis, with the units in larger size classes having a proportionately higher chance of selection. Each unit was given a weight according to the proportion of firms selected in each size class. The sample included 5,115 establishments with bench mark employment of 559,244.

The Survey and Response

After the initial mailing, two follow-ups were sent to nonrespondents. Telephone calls and personal visits were made to nonrespondents where the data was critical for calculating valid estimates. Of the 5,115 establishments in the survey, replies were received from 3,150, a response rate of 62 percent, with total employment of 315,807.

The Estimating Procedures

All useable questionnaires were stratified into seven size groups, by industry. Reported total employment and occupational employment on each questionnaire was multiplied by the weight assigned during sample selection. These industry data were then divided into the employment in the ES 202 report (stratified by corresponding cells) for the reference month of the survey. The result produced by this procedure is known as the benchmark factor. This factor was then applied to the occupation data, thus accounting for nonresponse. These occupational estimates were then summed across size classes in industry totals.

Sampling Error

Sampling error is a arithmetic measure of the precision of an estimate. It is the difference between the estimate computed from the sample and the result that would have been obtained if the same methods were used to collect identical information from the universe. The relative errors listed in this report are the sampling errors of each occupation expressed as a percent of that occupational estimate. The relative errors shown are such that the chances are 2 out of 3 that the results of a comparable full scale data collection, using the same survey approach, would not differ by more than the percent shown; the chances are 19 out of 20 that the

results of a full scale data collection would not differ by more than twice the percent shown. For example, it is estimated in this report that there are 300 Back Tenders employed in SIC, 26 Paper and Allied Products, making up 1.02 percent of total workers in the industry. Thus the chances are about 68 out of 100 that the results of a comparable full scale data collection would differ by less than 15 (5 percent) from the 300 estimated; similarly the estimated 1.02 percent of total employment would differ by less than .05 percent of total employment.

Nonsampling Error

The results of this survey are subject to biases and other nonsampling errors. Although careful editing and screening steps were taken, responding establishments may account for some errors in computations and processing, as well as placing workers in a wrong occupation. The nonrespondents are a source of nonsampling error for which measures were not available but are reflected in the estimating procedure.

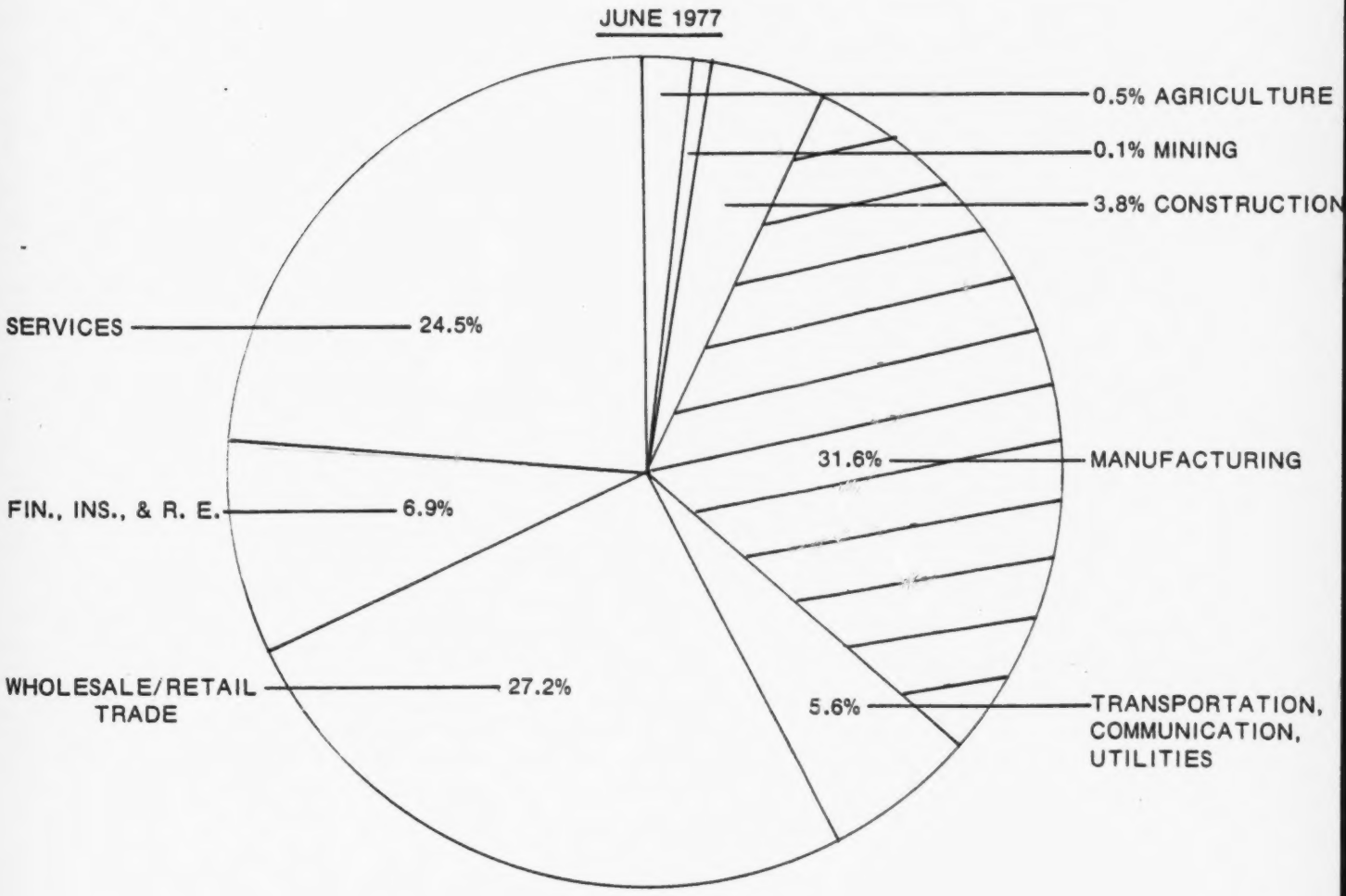
SCOPE OF SURVEY

This survey covered all Standard Industrial Classifications in the Manufacturing Division of the 1972 Manual. For your convenience listed below are the two digit SIC Codes with their short titles.

SIC CODE	SHORT TITLES
20	Food and Kindred Products
21	Tobacco Manufactures
22	Textile Mill Products
23	Apparel and Other Textile Products
24	Lumber and Wood Products
25	Furniture and Fixtures
26	Paper and Allied Products
27	Printing and Publishing
28	Chemicals and Allied Products
29	Petroleum and Coal Products
31	Leather and Leather Products
32	Stone, Clay, and Glass Products
33	Primary Metal Products
34	Fabricated Metal, Metal Products
35	Machinery, Except Electrical
36	Electrical Equipment and Supplies
37	Transportation Equipment
38	Instruments and Related Products
39	Miscellaneous Manufacturing Products

Based on 1972 SIC CODES

MANUFACTURING - SHARE OF COVERED EMPLOYMENT



INDUSTRY	JUNE 1977 EMPLOYMENT	PERCENT TOTAL
Agriculture	10,829	0.5
Mining	985	0.1
Construction	75,640	3.8
Manufacturing	628,672	31.6
Trans., Comm., Util.	111,024	5.6
Wholesale/Retail Trade	538,587	27.1
Fin., Ins., Real Estate	137,181	6.9
Services	487,806	24.5
Total	1,990,724	100.0

MANUFACTURING
Employment Trends 1974-1977

SIC 1/	Reference Month	1974	1975	1976	1977
20	June	29,839	28,612	30,191	29,494
21	April	116	71	66	26
22	April	30,559	24,680	28,404	27,716
23	May	44,045	40,343	44,704	43,386
24	May	5,149	4,101	4,737	5,275
25	June	9,769	8,400	8,535	8,277
26	April	33,328	27,104	28,902	29,403
27	May	43,593	40,444	41,198	41,293
28	June	20,831	19,277	18,738	18,550
29	May	1,135	1,147	1,147	1,273
30	June	34,008	26,978	28,801	29,710
31	May	25,077	23,219	25,495	23,394
32	May	14,161	10,870	11,333	11,274
33	April	15,283	13,142	13,316	14,727
34	June	58,473	46,864	50,375	51,231
35	June	77,624	74,442	75,690	83,445
36	June	104,783	84,785	88,088	94,386
37	June	27,811	29,658	31,161	35,430
38	June	46,587	44,055	44,918	50,904
39	May	27,463	23,519	23,999	25,192
TOTAL		649,634	571,711	599,698	624,386

1/ 1972 SIC CODES

MANUFACTURING
Distribution of Establishments and Employment, by 2 Digit SIC
March, 1977

			Size Groups Ø																	
			1		2		3		4		5		6		7		8		9	
SIC	No. Firms	Total Employ.	No. Firms	Emp.	No. Firms	Emp.	No. Firms	Emp.	No. Firms	Emp.	No. Firms	Emp.	No. Firms	Emp.	No. Firms	Emp.	No. Firms	Emp.	No. Firms	Emp.
20	583	28,442	127	155	101	631	100	1,367	119	3,711	62	4,478	51	7,381	15	475	8	5,967		
21	4	26	2	0	0	0	2	26												
22	332	27,910	59	76	45	287	38	536	78	2,464	43	3,059	45	7,881	13	4,751	10	6,880	1	1,976
23	753	42,451	133	167	98	594	113	1,616	175	5,628	116	8,072	89	13,121	21	7,405	7	4,549	1	1,299
24	366	4,776	158	200	83	531	61	824	43	1,217	16	1,059	4	587	1	358				
25	338	7,872	106	143	66	385	69	960	54	1,680	25	1,737	16	2,446	2	521				
26	323	29,386	25	37	41	238	51	680	57	1,787	61	4,171	63	10,270	17	5,386	7	4,453	1	2,364
27	1,433	41,672	472	719	367	2,235	250	3,408	190	5,608	73	5,039	55	8,494	13	4,449	10	6,722	3	4,998
28	367	19,485	87	118	88	540	53	715	69	2,124	32	2,154	19	2,653	11	3,548	6	3,808	2	3,825
29	40	1,168	9	19	13	77	5	63	6	178	4	269	3	562						
30	443	29,199	68	81	65	419	76	1,052	108	3,600	65	4,603	39	6,221	13	4,018	5	3,677	4	5,528
31	345	22,893	71	97	64	410	47	632	61	1,925	36	2,532	39	6,297	24	8,263	2	1,671	1	1,066
32	307	10,513	110	154	80	520	51	684	31	983	16	1,193	14	1,941	4	1,170	0	0	1	3,868
33	265	14,458	50	60	35	237	44	589	60	1,907	38	2,638	23	3,572	14	4,853	1	602		
34	1,089	50,762	232	302	218	1,405	212	2,892	243	7,880	98	6,755	52	7,897	20	6,867	11	6,781	3	7,983
35	1,530	79,307	410	648	391	2,373	282	3,882	232	7,120	98	6,865	54	8,245	30	10,516	18	12,987	15	26,671
36	665	91,542	136	163	102	658	81	1,115	125	4,056	82	5,909	71	11,061	33	11,744	19	11,906	16	44,930
37	156	33,560	44	61	29	169	17	257	29	883	16	1,147	8	1,143	5	1,798	1	529	7	27,573
38	444	48,965	107	128	82	524	71	946	75	2,339	37	2,692	31	4,946	21	7,786	13	8,829	7	20,725
39	549	25,137	169	232	144	873	75	1,068	69	2,328	50	3,485	25	4,324	5	1,547	8	5,331	4	5,949
20-39	10,332	609,524	2,575	3,560	2,112	13,106	1,698	23,362	1,824	57,418	968	67,857	701	109,042	262	89,732	126	86,692	66	158,755

Ø SIZE GROUP	NO. EMPLOYEES
1	0- 3
2	4- 9
3	10- 19
4	20- 49
5	50- 99
6	100- 249
7	250- 499
8	500- 999
9	1000 +